

CLAIMS

What is claimed is:

- 1 1. In a decoder having one or more branch metric units for calculating
2 branch metric values, a method for performing normalization comprising:
3 if a specified normalization condition is met, adding a normalization
4 amount to a branch metric value at each of said branch metric units to produce a
5 normalized branch metric value.

- 1 2. The method as in claim 1 wherein said specified normalization
2 condition is that a plurality of state metrics are above a threshold value.

- 1 3. The method as in claim 1 further comprising adding said normalized
2 branch metric value to a plurality of stored state metric values.

- 1 4. The method as in claim 3 wherein said state metric values are stored
2 in a plurality of accumulators.

- 1 5. The method as in claim 1 wherein said branch metric calculations are
2 Viterbi branch metric calculations.

- 1 6. The method as in claim 3 further comprising:
2 if a second specified normalization condition is met, adding a second
3 normalization amount to branch metric calculations performed by each said one
4 or more branch metric units to produced a second normalized branch metric
5 value.

1 7. The method as in claim 6 wherein said second specified normalization
2 condition is that a plurality of state metrics are above a second threshold value.

1 8. A method comprising:
2 monitoring a plurality of state metric values; and
3 subtracting a normalization amount from each of said state metric values
4 when each of said state metric values are above a first specified threshold.

1 9. The method as in claim 8 wherein subtracting comprises:
2 subtracting said normalization amount from branch metric values
3 calculated by one or more branch metric units to produce normalized branch
4 metric values, said normalized branch metric values combined with said state
5 metric values.

1 10. The method as in claim 8 further comprising:
2 subtracting a second normalization amount from each of said state metric
3 values when each of said state metric values are above a second specified
4 threshold.

1 11. The method as in claim 8 wherein said state metric values are stored
2 in a plurality of accumulators.

1 12. The method as in claim 8 wherein said state metric values are Viterbi
2 state metric values.

1 13. An apparatus comprising:
2 normalization logic to generate a normalization signal responsive to a
3 specified normalization condition; and
4 a branch metric unit to subtract a normalization amount from a branch
5 metric value responsive to said normalization signal.

1 14. The apparatus as in claim 13 wherein said specified normalization
2 condition is that a plurality of state metric values are above a threshold value.

1 15. The apparatus as in claim 13 further comprising:
2 an adder to add said normalized branch metric value to a plurality of
3 stored state metric values.

1 16. The apparatus as in claim 15 further comprising:
2 a plurality of accumulators for storing said state metric values.

1 17. The apparatus as in claim 13 wherein said branch metric value is a
2 Viterbi branch metric value.

1 18. The apparatus as in claim 13 wherein said normalization logic
2 generates a second normalization signal responsive to a second specified
3 normalization condition, and wherein said branch metric unit subtracts a second
4 normalization amount from said branch metric value responsive to said second
5 normalization signal.

1 19. The apparatus as in claim 18 wherein said second specified
2 normalization condition is that a plurality of state metric values are above a
3 second threshold value.

1 20. A machine-readable medium having code stored thereon which
2 defines an integrated circuit (IC), said IC comprising:
3 normalization logic to generate a normalization signal responsive to a
4 specified normalization condition; and
5 a branch metric unit to subtract a normalization amount from a branch
6 metric value responsive to said normalization signal.

1 21. The machine-readable medium as in claim 20 wherein said specified
2 normalization condition is that a plurality of state metric values are above a
3 threshold value.

1 22. The machine-readable medium as in claim 20 wherein said IC further
2 comprises:
3 an adder to add said normalized branch metric value to a plurality of
4 stored state metric values.

1 23. The machine-readable medium as in claim 22 wherein said IC further
2 comprises:
3 a plurality of accumulators for storing said state metric values.

1 24. The machine-readable medium as in claim 20 wherein said branch
2 metric value is a Viterbi branch metric value.

1 25. The machine-readable medium as in claim 20 wherein said
2 normalization logic generates a second normalization signal responsive to a
3 second specified normalization condition, and wherein said branch metric unit
4 subtracts a second normalization amount from said branch metric value
5 responsive to said second normalization signal.

1 26. The machine-readable medium as in claim 18 wherein said second
2 specified normalization condition is that a plurality of state metric values are
3 above a second threshold value.